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## Section 3 – CBRNE Operational and Search & Rescue Equipment

### Overview

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This section contains equipment needed to sustain operations and provide general support during WMD response operations. In the Fall 2004 SEL, Explosive Device Mitigation and Remediation Equipment was moved to Section 2, and all other operational and search & rescue equipment moved to Section 3. This edition maintains the new structure, and increases the alignment between the SEL and the DHS G&T Authorized Equipment List (AEL). The practice of including Features, Operating Considerations, and Standards references for each item is also continued in this edition.

### Changes for 2006

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In addition to routine edits throughout the section, the 2006 edition contains several additions that may be of interest:

- Multiple changes to the Vehicles section, including mass casualty transport items (ambulance buses and mass casualty conversion kits for buses and aircraft), command vehicles, and specialized mission vehicles.
- A new category (03OE-07) for robot platforms and unmanned vehicles, including unmanned aerial vehicles.
- New Logistics items for water distribution systems and fuel storage.
- A new Safety Equipment item for current detectors.

### Online Selection Factors

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Like most sections in the 2006 SEL, the online<sup>1</sup> version of the CBRNE Operational and Search & Rescue Equipment Section uses a pair of selection factors to assist users in quickly identifying appropriate equipment items. For this section, the SubGroup chose to use Proficiency Level and Hazard Environment (described below) as the two factors. Every online item is “tagged” for each appropriate combination of factors. Thus users on the online version can choose any combination of Proficiency Level and Hazard Environment, and the system will provide a list of all items tagged for that combination.

The first selection factor is Proficiency Level. In addition to any specific training required to operate an individual piece of equipment, the equipment operator must possess the skills necessary to meet the recommended proficiency level. The factors considered in determining this level include the anticipated location of operation of the equipment (i.e. hot zone, warm zone, or cold zone), the complexity of the equipment, and the necessity of chemical or biological training or expertise. The definitions used for proficiency levels have been adapted using NFPA 472, Standard for Professional Competence of Responders to Hazardous Materials Incidents, as a starting point. They are:

- **Awareness Level.** Responders at the awareness level are those persons who, in the course of their normal duties, can be the first on the scene of an incident. First responders at the awareness level are expected to recognize the presence of hazardous materials, protect themselves, call for trained personnel, and secure the area.
- **Operational Level.** Responders at the operational level are those persons who respond to WMD incidents as part of the initial response to the incident for the purpose of protecting nearby persons, the environment, or property.

<sup>1</sup> The on-line version is available on the Responder Knowledge Base, [www.rkb.mipt.org](http://www.rkb.mipt.org).

- **Technician Level.** Technicians are those persons possessing special training who respond to incidents for the purpose of control, active response, or remediation. Technicians are expected to use specialized equipment such as chemical protective clothing and control equipment.
- **Specialist Level.** Specialists are those persons possessing advanced special training who respond to incidents for the purpose of providing specialized assistance in control, active response, or remediation. Specialists are expected to use complex equipment to perform tasks restricted to those with specific advanced training.
- **Command Level.** Command level personnel include the incident commander and other staff members. The incident commander is that person who is responsible for all decisions relating to the management of the incident and site operations.

The second selection factor is the Hazard Environment(s) for which each item is suitable. The values for this factor address the commonly used CBRNE nomenclature. However, for our purposes it is useful to represent the Nuclear “N” as part Thermal, part Explosive, and part Radiological. Therefore, the values used are:

- Chemical
- Biological
- Radiological
- Thermal
- Explosive

## Section 3 | CBRNE Operational and Search &amp; Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b> 01 - Law Enforcement			
03OE-01-BGEV  Bags and/or Canisters, Evidence	Evidence bags and/or canisters	Airtight, susceptible to permanent labeling. ----- Chemical compatibility	
03OE-01-GLVF  Gloves, Protective, Fire-resistant	Fire-resistant gloves provide the wearer's fingers, hands, and wrists with protection from flash fires and short duration exposure to high heat, while still providing the wearer with sufficient dexterity to meet mission requirements.	Gloves should meet fire resistance requirements of ANSI/ISEA 105. ----- Not for use in handling hazardous materials.	76
03OE-01-LLMN  Munitions, Less Lethal	Less lethal munitions for use in tactical law enforcement operations conducted in critical locations.	----- Specialized needs require a variety of munitions for situations such as refinery, pipelines, aircraft entries, etc.	
03OE-01-VSTO  Vests, Operational	Operational vests; duty gear and modular load bearing systems.	Capable of carrying multiple items such as radio, flashlight, camera, munitions, and antidote/decon kits. ----- Depending upon mission, consideration should be given to high or low visibility vest.	

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

### Section 3 | CBRNE Operational and Search & Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b>			
<b>02 - Optics</b>			
03OE-02-BNOC Binoculars/Scopes	Optical systems that permit remote observations during field operations.	Water-resistant, compact, carrying case, lightweight	
03OE-02-FIBR Systems, Fiber Optic	Fiber optic systems that permit remote observation during field operations.		
03OE-02-LASR Range Finder, Laser	A distance-measuring device capable of instantaneously measuring distance to target with accuracy of +/- one yard/meter.	Light weight, handheld, battery powered. ----- Used for scene evaluation and structural monitoring. Should be ruggedized or drop resistant.	
03OE-02-SCOP Spotting Scopes/Surveillance Telescopes	Optics capable of use in long range, sometimes long term, observation of tactical, structural stability, or rescue operations.	Zoom capable; mount compatible; drop resistant; water resistant; lightweight; portable. ----- Normally used in tripod mount configuration.	
03OE-02-TILA Optics, Thermal Imaging and/or Light Amplification	Thermal imaging and/or light amplification optics for search operations involving trapped or lost victims or tactical operations.	Video transmission, recording, and overlay; image size. Waterproof; heat-resistant; durable case with interior construction designed to protect screen and other components. ----- No models currently rated as intrinsically safe for use in flammable atmospheres. Battery life, availability, recharge time or time to replace. Usability by personnel wearing heavy gloves.	122

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

## Section 3 | CBRNE Operational and Search &amp; Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b>			
<b>03 - Scene Control</b>			
03OE-03-CACS  System, Capture and Containment	Capture and containment system for hazardous spills.		
03OE-03-GLRL  System, Marking, Green Line/Red Line	Marking system, Green Line/Red Line, battery activated or appropriate substitute.	LEDs or chemical lights for use in low visibility areas	
03OE-03-KTCL  Kit, Chemical Leak Control	Chemical leak control kit	Plugging and patching kits of varying sizes and configurations.	
03OE-03-KTFA  Kit, First Aid, Trauma Type	Trauma type first aid kit, including bulk dressings and bandages, splints, occlusive dressings and associated supplies for treating trauma patients in a field environment.	Portable, back-pack construction; separate pouches/pockets for organization and rapid access to differing materials; water-resistant; decontaminable. ----- Consider durability/resistance to normal decontamination procedures. Should be brightly colored for easy identification during rescue operations, but also available in subdued colors (black, camouflage, etc.) for tactical operations.	
03OE-03-LOTO  System, Lock Out/Tag Out	Lock Out/Tag Out system to secure, control, or block mechanical, electrical, hydraulic, or pneumatic systems or components to ensure protection	Portable kit; reusable. ----- Use is required for confined space entries when systems encroach on workspace and create a potential hazard to entrants. →	53

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

### Section 3 | CBRNE Operational and Search & Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b> 03 - Scene Control - <i>Continued</i>			
	of personnel.		
03OE-03-LTPA  Lighting, Portable Area Illumination	Portable area illumination for work areas, rescue sites, and staging areas during night operations or in areas with insufficient ambient light.	Lightweight; portable; externally powered; drop-resistant; extendable or towable mounts. ----- Extendable mounts are useful both for positioning and to extend height.	122
03OE-03-MEGA  System, Public Address, Handheld	Battery powered megaphone / public address system with corded microphone	Lightweight, portable, handheld; remote microphone feature, variable volume. ----- Useful for crowd control or briefing incident personnel.	
03OE-03-SIGN  Signs	Restricted access and caution warning signs, preprinted or field printable, various colors, sizes, and shapes.	Wind/weather resistance Various materials, such as tag board or sheet plastic ----- Night visibility Mountable on hard surfaces	
03OE-03-TIMR  Timer	Timer or stopwatch, used for timing rescuer time on cylinder, entry time/duration, or any other operation requiring accurate time documentation.	Water resistant, drop resistant, digital or analog ----- Day/night readability, large font/face.	

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.



## Section 3 | CBRNE Operational and Search &amp; Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b>			
<b>04 - Safety Equipment</b>			
03OE-04-BALA  Balaclava, Fire Resistant	Fire resistant/retardant hood that affords head protection in the event of flash fire.	Nomex or similar fire-resistant material. ----- Compatibility with respiratory protection; may increase rescuer fatigue due to heat retention. Recommend items that meet the protective hood requirements of NFPA 1971 or NFPA 2112.	105, 119
03OE-04-CRNT  Detectors, Current	Equipment for detecting and/or measuring AC or DC current. Includes non-contact detectors for use in finding “live wiring” in walls or collapsed structures.	Must be compact, lightweight, and usable in close quarters.	
03OE-04-EXAC  Extinguisher, Fire, Class ABC	Class ABC fire extinguisher, multi-purpose, handheld, 20 lb capacity	Non-conductive hose assembly; rechargeable; portable. Mounting brackets for wall or vehicle. ----- Not effective for Class D fires.	98
03OE-04-EXDD  Extinguisher, Fire, Class D	Portable Class D Fire extinguisher	Pressure operated or manual. ----- For use on small amounts of metals. Not effective on Class A or B fires.	98
03OE-04-GRCA  Cables, Grounding	Grounding cables, point-type clamps on both ends; 1/8” stainless steel (uninsulated) 50’ minimum.	Reducing risk of static electricity discharge in movement of flammable liquids, grounding and bonding operations. ----- During transfer operations involving flammable/combustible liquids, containers should be bonded together and grounded.	121, 122

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

### Section 3 | CBRNE Operational and Search & Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b> <b>04 - Safety Equipment - <i>Continued</i></b>			
03OE-04-GRRD  Rod, Copper Grounding	Copper grounding rod, 3/4" x 6' (minimum length) with slide hammer or driver for demolition hammer.	For use in reducing risk of static electricity discharge during movement of flammable liquids, grounding, and bonding operations. ----- Used with bonding and grounding equipment.	121, 122
03OE-04-GRRT  Tester, Ground Resistance	Ground resistance tester	Electrical resistance (OHM) measurement device to ensure proper grounding and bonding during movement of flammable liquids.	122
03OE-04-HSMN  Monitor, Heat Stress	Heat stress monitor (ambient and personal)	Area monitoring of wet bulb temperatures (WBGT) or personal monitor.	
03OE-04-KTTL  Kit, Tool, Miscellaneous, Non-sparking	Non-sparking tool kit, to include bung and spanner wrenches and tool box.	Tool for use with flammable liquids or in Lower Explosive Limit (LEL) environments. ----- Use of non-sparking tools does not eliminate all sources of ignition.	
03OE-04-LTHE  Lights, Personal, Inherently Safe	Hand-held lights or lights mounted on helmets or otherwise worn by the user for use in potentially flammable atmospheres.	Battery powered or rechargeable; waterproof; drop resistant. Handheld units need wrist strap or other means of securing unit. ----- Various means exists to make electrical equipment inherently safe for flammable environments. The resulting products are labeled "explosion proof" or "intrinsically safe". Also consider:  Power source Cords →	122

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

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Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b>			
04 - Safety Equipment - <i>Continued</i>			
		Plugs Compatibility with existing batteries or charging systems.	
03OE-04-LTHH  Light, Hand-Held or Helmet-Mounted Il- lumination	Hand-held lights or lights mounted on helmets or otherwise worn by the user for use in non-flam- mable or non-explosive atmospheres.	Waterproof; drop resistant. ----- Not for use in explosive environments Mounting system Battery life Type Availability	
03OE-04-MMTR  Multi-Meter, Electrical	Intrinsically safe electri- cal multi-meter, or VOM (Volt Ohm Meter).	Digital or analog. Should include cables, tips, and protective case. ----- Can be utilized in PPE.	122
<b>OE - Operational Equipment</b>			
05 - Rope Safety			
03OE-05-HARN  Harnesses, Life Safety/ Rappelling	Body harnesses used to support a person during rappelling or rope rescue operations.	----- Durability; number/type of hard attachment points; compatibility with PPE. Personnel need to be properly trained in these functions based upon appointed standards.	110
03OE-05-ROHA  Hardware, Rappelling or Rescue Operations	Rappelling/rescue hard- ware, including ascenders, friction devices, hand rope grabs, carabiners, plates, racks, etc.	----- Stainless steel hardware, though heavier, tends to be more durable. Not all hardware used in rescue operations is covered under NFPA 1983. Personnel trained in accordance with appropriate standards.	110

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

### Section 3 | CBRNE Operational and Search & Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b>			
05 - Rope Safety - <i>Continued</i>			
03OE-05-ROPE Rope, Life Safety	Rope of various diameters, lengths, and ratings.	----- Dynamic vs. static ropes; rescue vs. tactical operations; effects of chemical exposure. Personnel must be properly trained in accordance with appropriate standards.	110
03OE-05-ROSO Software, Rope	Includes items such as: Prusik cords, softrope grabs, bags, webbing, rope protection.	----- Compatibility with existing ropes and hardware. Not all rope used in rescue operations is considered “life safety” rope. Life Safety Rope should be certified as compliant with NFPA 1983.	110
<b>OE - Operational Equipment</b>			
06 - Vehicles			
03OE-06-AAIR Equipment/Kits, Aircraft Mass Casualty Conversion	Equipment used to convert and use non-medical aircraft for patient transport.	Conversion kits should be easy to store and assemble. ----- Ability to carry and secure patients on litters, and medical supplies and equipment needed during patient transport. Includes mechanism(s) for patient restraint as well as for securing devices that are used for carrying non-ambulatory patients. Ability to communicate with regulating and receiving authorities. Provision of privacy and screening from public view. Compatible and interoperable with other local health, medical and transportation system assets.	83
03OE-06-ABUS Vehicles, Mass Casualty Transport	Specialized vehicles such as “Ambulance Buses” to transport stretcher-borne patients during a mass-casualty event. Includes retrofit kits to convert existing vehicles into mass casualty transports.	Conversion kits should be easy to store and assemble. ----- Ability to carry and secure patients on litters, and medical supplies and equipment needed during patient transport. Includes mechanism(s) for patient restraint as well as for securing devices that are used for carrying non-ambulatory patients. Ability to communicate with regulating and receiving authorities. Provision of privacy and screening from public view. Compatible and interoperable with other local health, medical and transportation system assets.	81, 96

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

## Section 3 | CBRNE Operational and Search &amp; Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b> 06 - Vehicles - <i>Continued</i>			
03OE-06-CMDV  Vehicle, Command, Mobile	Mobile command vehicles for use at incident scene.		
03OE-06-H2OT  Trailers, Water	Water trailers (potable and non-potable) with distribution system and pump.	Pneumatic or electric brakes; filling and delivery mechanism; trailer hitch or other means of movement by vehicle. ----- Consider operating terrain. Potable and non-potable units are not interchangeable. Consider associated sanitization and stabilization procedures. Potable water sources must meet water quality standards as regulated by EPA.	
03OE-06-MISS  Vehicles, Specialized Mission, CBRNE	Specialized vehicles designed to support specific CBRNE mission area requirements. Examples include deployment vehicles, tactical intervention vehicles, hazmat units, communications units, bomb response units, mobile morgue units, and special transport units such as all-terrain vehicles (ATVs), 2-wheeled personal transports for fully suited bomb technicians, and robot trailers designed to accommodate →	Extensive customization available based upon specific mission. Choice of drive system, such as wheeled, tracked, etc. ----- Consider mission requirements, terrain/operating area, and personnel requirements (including personal protective equipment) when selecting vehicle.	

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

### Section 3 | CBRNE Operational and Search & Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b>			
06 - Vehicles - <i>Continued</i>			
	special mission equipment and accessories.		
03OE-06-VHCL Vehicle, Commercial	Commercial vehicles, vans, SUVs, flat bed and panel trucks for personnel transportation and equipment movement.	Run-flat tires; heavy duty configuration. ----- Vehicle weight, transmission type, drive/braking systems, and size; Impact on licensing requirements.	
03OE-06-VHMP Packages, Maintenance	Vehicle and equipment maintenance packages. Applicable to both commercial and specialized vehicles.		
<b>OE - Operational Equipment</b>			
07 - Robots and Remotely Operated Vehicles			
03OE-07-ROBT Robots	Robotic platforms to support various mission areas such as explosive device remediation, hazardous materials operations, tactical law enforcement operations, search & rescue, and surveillance/detection.	Attachment points for cameras, sensors, and other devices. ----- Consider operating time limitations and range for controllability.  Robotic software elements should comply with the interoperability standards set by the Joint Architecture for Unmanned Systems (JAUS, see <a href="http://www.jauswg.org">www.jauswg.org</a> ). JAUS has been endorsed by the National Bomb Squad Commanders Advisory Board.	
03OE-07-RPVS	Remotely piloted vehicles to support various	Attachment points for cameras, sensors, and other devices. ----- →	

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

## Section 3 | CBRNE Operational and Search &amp; Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b> 07 - Robots and Remotely Operated Vehicles - <i>Continued</i>			
Vehicles, Remotely Piloted	mission areas such as explosive device remediation, hazardous materials operations, tactical law enforcement operations, search & rescue, and surveillance/detection. Examples include unmanned aerial vehicles (fixed or rotary-wing), submersible vehicles, and remotely-controlled ground vehicles.	<p>Consider operating time limitations and range for controllability.</p> <p>Robotic software elements should comply with the interoperability standards set by the Joint Architecture for Unmanned Systems (JAUS, see <a href="http://www.jauswg.org">www.jauswg.org</a>). JAUS has been endorsed by the National Bomb Squad Commanders Advisory Board.</p>	
03OE-07-UPGD  Upgrades, Robots or Remotely Piloted Vehicles	Upgrades or accessories to basic Robot or RPV platforms, including software upgrades, battery/engine upgrades, range extenders, trailers, etc. Mission specific upgrades such as detectors and disrupters are detailed in other sections such as Explosive Tools, Search & Rescue, and Detection.	Robotic software elements should comply with the interoperability standards set by the Joint Architecture for Unmanned Systems (JAUS, see <a href="http://www.jauswg.org">www.jauswg.org</a> ). JAUS has been endorsed by the National Bomb Squad Commanders Advisory Board.	

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

### Section 3 | CBRNE Operational and Search & Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b>			
<b>08 - Material Handling Equipment</b>			
03OE-08-BULK Equipment, Bulk Material Handling	Equipment for movement of bulk material, including pallets, pallet lifting and movement devices, dollies, rigging, cargo netting, and loading ramps.	----- Suitability for intended use (i.e., pallets must fit into existing trucks, etc.). Compatibility of tiedown and material securing devices with platform(s). Compatibility and interoperability with local health and medical supply system.	
03OE-08-CART Cart, Field	Field cart for transporting tools, equipment, or personnel.	Flat bed; pneumatic tires. ----- Suitability for use on rough ground, pavement or gravel; compatibility with equipment storage/transportation systems.	
03OE-08-CHMS Containers, Hazardous Material Shipping	Hazardous material shipping containers	Chemically compatible with shipped materials. CFR Title 49 compliant. ----- May be required for liquids, solids, aerosols, or cylinders.	61, 62
03OE-08-CONT Containers, Storage	Storage containers	Rigid; reusable; stackable, with lifting handles. Removable or hinged lids. ----- At least one lifting handle for each 50 lbs of storage capacity.	
03OE-08-CPAC Carts, Portable Air Cylinder	Portable air cylinder carts for carrying spare breathing air cylinders to forward locations.	Consider terrain of intended use. Pneumatic tires may be preferable for certain areas.	
03OE-08-CPGC	Portable carts for transporting gas cylinders (not	Pneumatic tires; chain or brackets for securing cylinders; retractable dolly wheels. ----- →	

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.



## Section 3 | CBRNE Operational and Search &amp; Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b>			
08 - Material Handling Equipment - <i>Continued</i>			
Carts, Portable Compressed Gas Cylinder	breathing air) to forward locations.	Suitable for operation on rough or uneven ground; able to accommodate various diameters and lengths of cylinder.	
<b>OE - Operational Equipment</b>			
09 - Logistics and Administration			
03OE-09-BAGS Bags and Bivys	Bags and bivys - individual sleeping systems, including “stuff sacks”	Water and mildew resistant; machine washable; zipper closure. ----- Personal bags and bivys may be required to support personnel on extended operations.	
03OE-09-BGEQ Bags, Equipment	Equipment bags for storage and transportation of personal gear and equipment, personal protective equipment, and miscellaneous equipment.	Water and mildew resistant; machine washable; secure closure. ----- Appropriate size for contents and intended use. Depending upon use, consider protection capability for items to be moved.	
03OE-09-BKPK Back Pack, Modular	Modular back pack for carrying personal items or equipment to forward locations.	Water and mildew resistant; decontaminable; secure closure. ----- Modular construction and configurations to meet varying mission needs.	
03OE-09-COMP Compressors and Systems, Breathing Air	Air compressors or cascade filling systems suitable for refilling self-contained breathing apparatus (SCBA) or Self Contained Underwater Breathing Apparatus (SCUBA). Output compliant with		50, 111

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

### Section 3 | CBRNE Operational and Search & Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b> 09 - Logistics and Administration - <i>Continued</i>			
	NFPA 1989.		
03OE-09-FANE  Fan, Explosive-Proof, Exhaust	Explosive-proof exhaust fan for ventilation of confined spaces or enclosed areas with contaminated atmospheres.	Positive or negative pressure ----- Concerns regarding discharge air. If exhausting gases and vapors from an enclosed area, consideration should be given to the target discharge area.	122
03OE-09-FANV  Fan, Cooling/Heating/Ventilation	For personnel and decontamination tent use. Not for use in explosive environments.	For use in rehab and staging areas not requiring personal protective equipment.	
03OE-09-FRZR  Freezer/Refrigerator	General purpose freezer/refrigerator	Frost-free desirable for transporting glass containers of water w/evidence or samples. ----- Check capability to maintain control temperature is used for medications or temperature-sensitive reagents. Voltage requirement; 12v, 24v, 110v, 220v. May require generator for use in remote locations.	122
03OE-09-FUEL  Container, Fuel Storage	Portable and transportable containers for various fuels, including gasoline, diesel, etc.	CFR Title 49 compliant. Performance Oriented Packaging requirements.	66
03OE-09-H2OD  System, Water Distribution	Mobile systems and equipment for the transport and distribution of potable or non-potable	May be transportable by truck or designed with integral trailer. Systems exist for transport and local distribution. Transport distances will vary with conditions and relative elevation of source and destination. →	

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

## Section 3 | CBRNE Operational and Search &amp; Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b> 09 - Logistics and Administration - <i>Continued</i>			
	water. Includes pumping systems, piping, and storage containers with spigots or other facilities for filling personal containers.	----- Consider fuel requirements and exhaust limitations (e.g., Clean-Air requirements) for diesel/gasoline powered systems, or electrical requirements as appropriate. Consider throughput capacity against mission requirements. Systems are not rapidly interchangeable between potable and non-potable. Once a system is used for non-potable, it will require conditioning (at a minimum) before use for potable transport, and may not be reusable for potable at all.	
03OE-09-H2OP  System, Water Purification	Portable system for producing potable water, with integrated pump; battery or AC powered.	Portable; integral pump. Auto-shutoff upon compromise of purification ----- Minimum desirable output 30-60 GPH. Bladders or containers appropriate for potable water will be required for output.	
03OE-09-HSSF  Housing, Subsistence and Sanitation	Housing for response forces (e.g. tents, shelters, rehab trailers), subsistence and sanitation (field support).	Tents and sheltering equipment to allow for the development of a base of operations. This would include shelter, feeding and sanitation, portable HVAC.	
03OE-09-PCKO  Overpack	Overpack container, used to consolidate a load or facilitate handling of packages or cargo.	May be plastic or metal with or without liners. ----- Compatible with overpacked product. Not for use as a primary hazardous materials container, but may be used to protect and transport hazardous materials containers and/or evidence.	54, 63
03OE-09-SHEL  Shelter Systems, Rapid	Rapidly deployable shelter systems, hardwall or softwall (command and	May be designed in a wide variety of styles such as inflatable, framed, etc. ----- Time and human resources need for deployment. Weight, storage requirements, shelf- →	

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

### Section 3 | CBRNE Operational and Search & Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>OE - Operational Equipment</b>			
09 - Logistics and Administration - <i>Continued</i>			
Deployment	control, triage, evidence protection, etc.).	life, and maintenance are all operational considerations.	
03OE-09-SHEN  System, Environmental Control	Environmental control system for shelters.	High efficiency particulate and organic vapor filtration. ----- Consider life expectancy of filter system, filtration capacity, maximum operating concentration, and CFM (cubic feet/minute) rating.	
03OE-09-SHEP  System, Collective Protective	Collective protective system for shelters.		
<b>SR - Search &amp; Rescue Equipment</b>			
01 - Pneumatic Equipment			
03SR-01-ABAG  Airbag, Lifting, Low or High Pressure	Low or high pressure airbag lifting systems, bags, regulators, hoses, controllers, accessories and attachments for lifting heavy objects for extrication of trapped victims.	Thin, ability to gain access in small areas. Large lifting capability, rapidly deployable in field. ----- Must be used in conjunction with shoring or stabilizing systems to provide safety.	
03SR-01-COMP  Compressor, Industrial Air	Working air compressor, storage systems, accessories and attachments for powering pneumatic tools, systems and equipment.	Gasoline or electric powered, portable or with wheel kit, integrated regulator. Electrical units should meet requirements of NFPA 70. ----- NOT to be utilized for compression of breathing air or supplying breathing air systems.	122

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

## Section 3 | CBRNE Operational and Search &amp; Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>SR - Search &amp; Rescue Equipment</b>			
01 - Pneumatic Equipment - <i>Continued</i>			
03SR-01-SHOR  Equipment/System, Shoring	Expandable shoring and raker systems, regulators, controllers, hoses, accessories and attachments for stabilization of unstable loads or structures.	Manual locking vs. auto-locking, high strength, rapidly deployable in the field, reusable. ----- Pneumatics extend shore only, load supported by locking system. Must be utilized on static load or in conjunction with lifting system.	
03SR-01-TLPN  Tools, Hand, Pneumatic	Pneumatic-powered hand tools, accessories and attachments for cutting, breaking, drilling or chiseling wood, steel, concrete and other materials. Includes tools for applying or removing fasteners.	Lightweight, ability to fit into small spaces. ----- Reduces time to assemble and disassemble machinery. Requires eye, hand and hearing PPE.	
<b>SR - Search &amp; Rescue Equipment</b>			
02 - Tools			
03SR-02-MARK  Tools, Structural Assessment, Marking and Monitoring	Tools, equipment, accessories and attachments for assessing, marking and monitoring damaged structures and their stability.	Provides a means to survey and monitor damaged structures and danger to rescue personnel. ----- Requires additional training beyond rescuer level.	
03SR-02-SPRY  Sprayers, Handheld and Backpack	Handheld and backpack spray tanks/bladders and attachments, air pressure or manual pump operated	Limited volume, limited flow, portable, rapidly deployable in field. ----- Not for application of toxic or combustible materials. Utilized for application of water for fire extinguishment, controlling dust or cooling of cutting/boring tools.	

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

### Section 3 | CBRNE Operational and Search & Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>SR - Search &amp; Rescue Equipment</b> 02 - Tools - <i>Continued</i>			
03SR-02-TLHN  Tools, Hand	Manually operated hand tools, cutting torches, exothermic torches, accessories and attachments for cutting, prying, shoring, stabilizing, moving or applying or removing fasteners where powered tools are not appropriate or safe to use.	Manually operated, non-powered. ----- Utilization of appropriate PPE for task.	
03SR-02-TPEL  Tools, Power, Electric	Electrically-powered portable saws, cutters, breakers, drills, pumps, accessories and attachments.	Portable, lightweight, operable by a single operator. ----- Utilization of applicable PPE for task. Not intrinsically safe.	103
03SR-02-TPGS  Tools, Gasoline-Powered	Internal combustion engine, gasoline- powered portable cutting saws, accessories and attachments for rescue operations.	Lightweight, portable, operable by single operator. ----- Utilization of applicable PPE for task. Not intrinsically safe. Required ventilation or close monitoring of atmosphere in enclosed areas.	
03SR-02-TPHY  Tools, Power, Hydraulic	Portable hydraulically-operated tools and power units, hoses, accessories and attachments for rescue operations. Internal combustion or electric power unit.	Portable, operable by a single operator. Generally safer to use in areas of limited ventilation. ----- Portable; utilization of appropriate PPE for task; does not generate exhaust at the site where tool is used.	103

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

## Section 3 | CBRNE Operational and Search &amp; Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>SR - Search &amp; Rescue Equipment</b> 02 - Tools - <i>Continued</i>			
03SR-02-TRIG  Tools, Heavy Rigging	Slings, shackles, wire ropes, chains, swivel plates, anchors, hoists and accessories for lifting and moving large objects with cranes or other heavy equipment.	Reusable, large capacity. ----- Use requires training above rescuer level. Used in conjunction with heavy equipment and qualified operators.	
<b>SR - Search &amp; Rescue Equipment</b> 03 - Search Equipment			
03SR-03-KGAS  Kits, Confined Space Gas Monitoring	Kits that monitor the atmosphere in confined spaces to detect hazardous environments.	Detection of O <sub>2</sub> level, % LEL, and toxic gases. ----- Usable while wearing full personal protective equipment.	
03SR-03-LSTN  System, Listening	Seismic and acoustic listening devices and accessories for locating trapped and entombed victims not detectable by other means.	Portable, lightweight, rapidly deployed in the field. ----- Requires prior training. Requires ability to cause cessation of all noise-generating operations during search operations.	
03SR-03-SCAM  Camera, Search	Void area video search camera and accessories for inspecting voids and confined spaces with limited physical access.	Lightweight, portable, operable by a single operator, integrated illumination. Some units may have integrated listening devices. ----- Tools are conductive, may present electrocution hazard, not intrinsically safe.	
03SR-03-TPBM	Boundary marking tape: YELLOW Caution/ RED	Available in large rolls with handle for marking hot zones, operational areas, etc. →	

<sup>1</sup> Use numbers given to refer to Standards List at the end of this document.

### Section 3 | CBRNE Operational and Search & Rescue Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards <sup>1</sup>
<b>SR - Search &amp; Rescue Equipment</b>			
03 - Search Equipment - <i>Continued</i>			
Tape, Boundary Marking	Danger/ Incident specific (i.e., radiological, biological, chemical).		
<b>SR - Search &amp; Rescue Equipment</b>			
04 - Canines			
03SR-04-DOGS  Canines, Search & Rescue	Search & rescue canines, related CBRNE training, protective equipment/garments, and handling accessories.	----- Departments should consider and plan for food, kenneling, and veterinary expenses associated with search & rescue canines.	
<b>SR - Search &amp; Rescue Equipment</b>			
05 - Robotic Equipment			
03SR-05-RBTL  Attachments/Tools, Search & Rescue Robot or Remotely Piloted Vehicle	Attachments/tools for specialized search & rescue capability such as mountable cameras (including infrared), remote manipulators, listening devices, etc. Includes repeater devices for extended remote operations.	For use with robot or remotely piloted vehicle platforms. See 03OE-07-ROBT and 03OE-07-RPVS.  ----- Ensure compatibility with selected platform, including additional power requirements.	

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